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10/016,784	11/30/2001	Bin Zhao	12569-14/NEC	4490

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EXAMINER

JUBA JR, JOHN

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 09/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/016,784

Applicant(s)

ZHAO, BIN

Examiner

John Juba

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06/16/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 is/are allowed.
- 6) ☒ Claim(s) 18-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

Applicant's I.D.S. filed March 3, 2003 has been fully considered. The first citation on the second page (Electromagnetic Theory) has been lined-through as not being in proper form as to authorship and publication.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 18 - 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Sharp, et al (U.S. Patent number 6,049,367; hereinafter "Sharp '367"). Sharp '367 disclose a filter assembly suitable for use in wavelength division multiplexing applications (Col. 3, lines 41-45; Col. 9, lines 18 - 25) and having two outputs (e.g., as shown in Figure 26). The filters have a comb response (Col. 12, lines 19 – 28 and 34 - 40), and thus comprise "interleavers" as broadly recited. Referring to the designs

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tabulated in Columns 27 and 28, Sharp '367 anticipate the recited arrangement of birefringent elements as follows:

Claim 18, fourth tabulated row reads on the "5" retarder design in Table II, where the first stage retarders are $2\Gamma (\varphi_3=9^\circ)$, $2\Gamma (\varphi_2=27^\circ)$, $\Gamma (\varphi_1=45^\circ)$ and the second stage retarders are $\Gamma (90 - \varphi_3)$, $2\Gamma (90 - \varphi_2)$, $2\Gamma (90 - \varphi_1)$, for components having a state of polarization (SOP) parallel with respect to their SOP at the input to the first stage, at least for one condition of the LCD rotator. Thus, with respect to a polarization component perpendicular to that of the input polarization, the second stage orientations are $-\varphi_3$, $-\varphi_2$, and $-\varphi_1$, respectively. [Consider for example the first stage angles as being measured with respect to a polarization component along the horizontal axis. The second stage orientations for the perpendicular component are seen to be counter-rotated with respect to the vertical axis.]

Claim 19 reads on this same embodiment wherein the first and second stage phase delays are selected from the second recited set (in each case; *i.e.*, are 2Γ , 2Γ , Γ and Γ , 2Γ , 2Γ). With particular regard to claim 21,

Claim 20, fourth tabulated row reads on the "3" retarder design in Table II, where the first stage retarders are $2\Gamma (\varphi_2=15^\circ)$, $\Gamma (\varphi_1=45^\circ)$ and the second stage retarders are $\Gamma (90 - \varphi_1)$, $2\Gamma (90 - \varphi_2)$, for components having a state of polarization (SOP) parallel with respect to their SOP at the input to the first stage, at least for one condition of the LCD rotator. Thus, with respect to a polarization component perpendicular to that of the input polarization, the second stage orientations are $-\varphi_1$, $-\varphi_2$, respectively. [Consider for example the first

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stage angles as being measured with respect to a polarization component along the horizontal axis. The second stage orientations for the perpendicular component are seen to be counter-rotated with respect to the vertical axis.]

Claim 20 is rejected under 35 U.S.C. 102(e) as being anticipated by Wang, et al (U.S. Patent number 6,441,960). Referring *for example* to Figures 4A – 4C, and Figure 7 along with associated text, Wang, et al disclose first (403) and second (407) “interleavers” wherein the dispersion versus wavelength characteristic of the first interleaver is effectively canceled with the dispersion versus wavelength characteristic of the second interleaver. In terms of the claimed structure,

the first stage phase delays are $\Gamma(\varphi_1=45^\circ)$ and $2\Gamma(\varphi_2=-15^\circ)$; while

the second stage phase delays are $2\Gamma(\varphi_2=-15^\circ)$ and $\Gamma(\varphi_1=45^\circ)$.

Wang, et al teach that upon entering the second stage, all of the components are “orthogonal” with respect to their SOP at the first stage input. Thus claim 20, third tabulated line, reads on this embodiment, wherein the second stage orientations are $+\varphi_2$ and $+\varphi_1$ for the orthogonal component and $(90 + \varphi_2)$ and $(90 + \varphi_1)$, for the parallel component, respectively.

Allowable Subject Matter

Claim 21 is allowable over the prior art. The previous indication of claims 15 and 18 as containing allowable subject matter is withdrawn in light of newly discovered prior art to Sharp '367. The examiner regrets the delay in applying this reference, and

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apologizes for any inconvenience. The following is a statement of reasons for the indication of allowable subject matter:

The prior art, taken alone or in combination, fails to teach or to fairly suggest first and second interleavers each comprising three birefringent elements with the recited phase delays and angular orientations, particularly wherein there is a polarization selection element between the first and second interleavers, as recited in claim 21.

Although Sharp '367 teach the use of polarizers between filter stages (Fig. 19), each of the filter stages has phase delays and orientations selected for different wavelength bands. Thus, no (arbitrary) designation of first, second, and third birefringent elements results in the polarization selection element being arranged as particularly recited in claim 21. Although Wang, et al '960 disclose a polarization selection element (404) between interleavers, the interleavers have only two birefringent elements.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double

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patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 18 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 3 of copending Application No. 10/016,166. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims are related to the copending claims as process of making and product made.

The inventions would be distinct only if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the process as claimed results only in the product as claimed, and the product as claimed can only be made by the process as claimed. Thus, it is seen that both claims are drawn to different statutory classes of the same invention. Since the product can be made through no other process, the process is an obvious process to arrive at the claimed product.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

R sponse to Amendment

The previous objection to the drawings is *withdrawn* in light of Applicant's remarks.

The cancellation of claims 1 – 9 and 17 obviates their rejection under 35 U.S.C. §101 for statutory double patenting over claims of copending U.S. application serial number 09/876,647.

Applicant's amendment of claim 18 is sufficient in overcoming the previous rejection thereof under §112, second paragraph.

The cancellation of claims 1 – 14, 16, and 17 obviates their continued rejection over the prior art as set forth in the last Office action (paper # 3).

To the extent applicable to claim 21, Applicant's remarks concerning the structures of Sharp, et al (U.S. Patent number 5,929,946) have been fully considered, but are not found persuasive. Because of minor but useful differences in the tabulated values, Sharp, et al (U.S. Patent number 6,049,367) has been applied. The disclosure is similar in most relevant aspects to that of Sharp, et al (U.S. Patent number 5,929,946) previously applied, and similar remarks apply.

The body of each of Applicant's pending claims variously recites two interleavers or the formation of two interleavers. The expression "interleavers" has accepted meaning in the art that is no different than the meaning ascribed in the instant specification. However, the *broadest reasonable interpretation* would require an interleaver only to have a comb response. Although Sharp, et al do not graph the comb response, the filters are clearly disclosed as having a comb response (Col. 12, lines 19


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- 28 and 34 - 40). Thus, the filters of Sharp, et al fairly constitute interleavers within the specificity recited. Thus, even if the artisan were to envisage the WDM filters of Sharp '367 as filtering "upper" or "lower" bands of WDM channels, the corresponding filters would still have a comb response. Sharp '367 tabulate the various designs generically in terms of the retardance values Γ . It is understood that the values used in "color" filtering applications are quite different from those used in wavelength multiplexing applications. Thus, barring a positive recitation of higher order retardances (usually attendant dense comb responses) or any recitation of channel spacings, there is nothing in the claims to distinguish over the prior art to Sharp '367.

Applicant is correct in noting that the double patenting rejection is provisional. Although claim 18 is now rejected over the prior art, a double-patenting rejection has again been entered in the interest of compact prosecution. This application will not pass to issue until the matter is resolved.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Juba whose telephone number is (703) 308-4812. The examiner can normally be reached on Mon.-Fri. 9 - 5.


JOHN JUBA
PRIMARY EXAMINER
Art Unit 2872

September 15, 2003